

INTRODUCTION

CONTENTS

| | | | |
|---|------|----------------------|------|
| | page | | page |
| DESIGNATIONS, LABELS/PLATES, CODES AND DIMENSIONS | 1 | SPECIFICATIONS | 8 |

DESIGNATIONS, LABELS/PLATES, CODES AND DIMENSIONS

INDEX

| | | | |
|--|------|---|------|
| | page | | page |
| Engine and Transmission/Transfer Case Identification . | 3 | Vehicle Designations | 1 |
| International Vehicle Control and Display Symbols . | 3 | Vehicle Dimension Data | 3 |
| Major Component Identification | 3 | Vehicle Identification Number (VIN) Plate | 1 |
| Tire Inflation Pressure Label | 3 | Vehicle Load Data | 3 |
| Vehicle Code Plate | 2 | Vehicle Safety Certification Label | 1 |

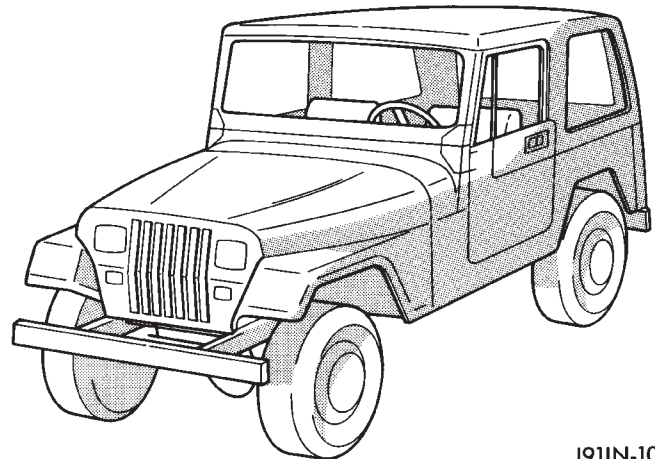
VEHICLE DESIGNATIONS

The Vehicle Designation Codes chart lists the vehicle description(s) and the corresponding vehicle designation code for each type of Jeep® vehicle (Figs. 1, 2, and 3). The vehicle designation codes are different from the Vehicle Identification Number (VIN) or body-type/style codes.

VEHICLE DESIGNATION CODES

| VEHICLE DESCRIPTION | CODE |
|---------------------|------|
| CHEROKEE - 2DR/4WD | XJ |
| CHEROKEE - 4DR/4WD | |
| CHEROKEE - 2DR/2WD | |
| CHEROKEE - 4DR/2WD | |
| WRANGLER - 4WD | YJ |

J931N-15



J911N-10

Fig. 1 YJ—Wrangler Multi-Purpose Vehicle (With Hard Top)

- month and year of vehicle manufacture;
 - vehicle identification number (VIN);
 - type of vehicle and
 - month, day and hour (MDH) of final assembly.
- The label is located on the driver's side door edge.

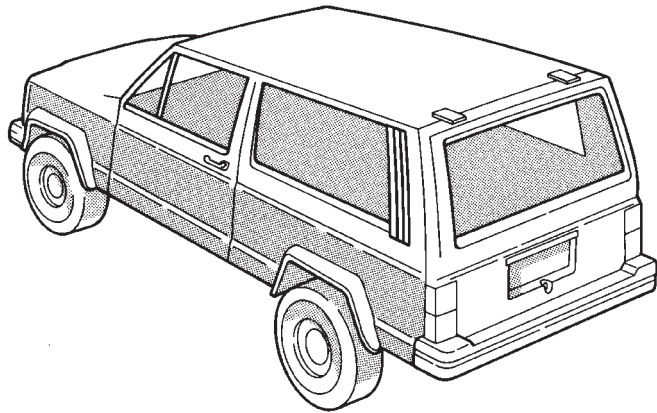
VEHICLE SAFETY CERTIFICATION LABEL

A vehicle safety certification label (Fig. 4) is attached to each Jeep® vehicle. The label also lists the:

- gross vehicle weight rating (GVWR) and the gross front and rear axle weight ratings (GAWR's) based on a minimum tire rim size and a maximum cold tire inflation pressure;

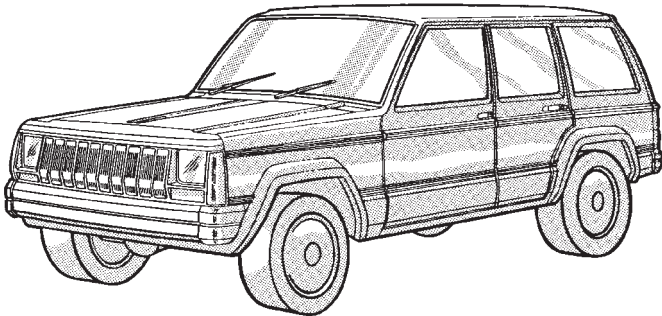
VEHICLE IDENTIFICATION NUMBER (VIN) PLATE

The vehicle identification number (VIN) plate is attached to the top left side of the instrument panel at the base of the windshield. Each VIN contains 17 alpha-numerical characters. Refer to the decoding chart to determine the actual identification of a Jeep® vehicle.



J911N-13

Fig. 2 XJ—Cherokee 2-Door Multi-Purpose Vehicle



J9223-15

Fig. 3 XJ—Cherokee 4-Door Multi-Purpose Vehicle

| | | | |
|------------|----------------------|-------------|----------|
| MFD BY | CHRYSLER CORPORATION | DATE OF MFR | GVWR |
| GAWR FRONT | WITH TIRES | RIMS AT | PSI COLD |
| GAWR REAR | WITH TIRES | RIMS AT | PSI COLD |

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

VIN: TYPE: SINGLE DUAL

BAR CODE

MDH: VEHICLE MADE IN 4648503 J911N-25

Fig. 4 Vehicle Safety Certification Label

VEHICLE CODE PLATE

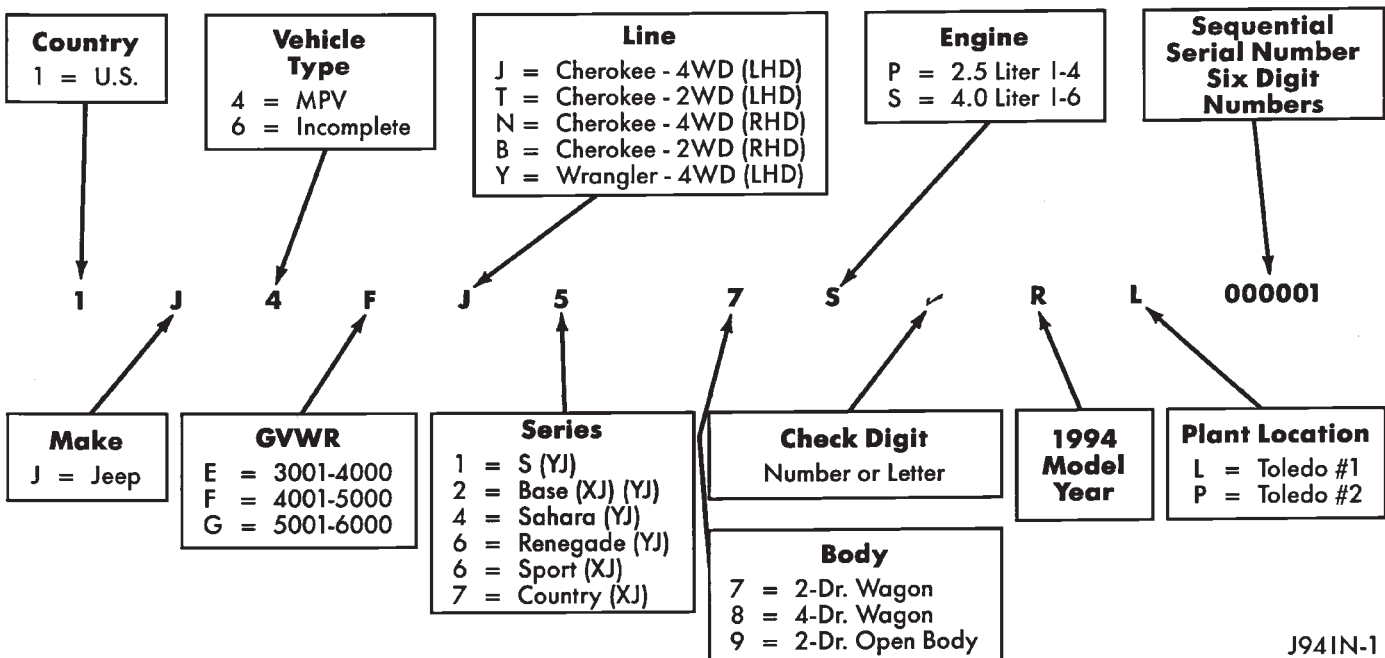
A metal vehicle code plate is attached to the left (driver) side of the dash panel in the engine compartment (Fig. 5). There can be a maximum of seven rows of vehicle information imprinted on the plate. The information should be read from left to right, starting with line 1 at the bottom of the plate up through line 7 (as applicable) at the top of the code plate.

Refer to the decoding chart to decode lines 1 up through 3.

Lines 4 through 7 (if used) on the vehicle code plate are imprinted on the plate (in sequence) according to the following:

- 3-character sales code,
- 3-digit numerical code, and
- 6-digit SEC code.

VEHICLE IDENTIFICATION NUMBER (VIN) DECODING



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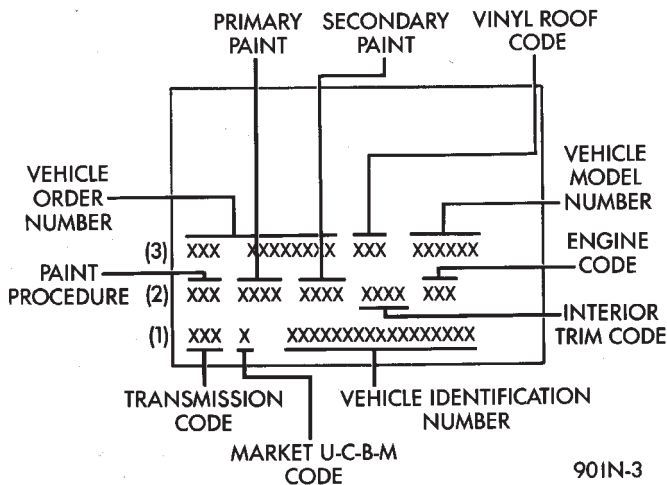


Fig. 5 Vehicle Code Plate

VEHICLE CODE DECODING

| | | |
|---------|-------------|---|
| Line #1 | Digit 1-3 | Transmission Sales Code |
| | Digit 4 | Open Space |
| | Digit 5 | Market Code - U-C-B-M |
| | Digit 6 | Open Space |
| | Digit 7-23 | Vehicle Identification No. |
| Line #2 | Digit 1-3 | Paint Procedure |
| | Digit 4 | Open Space |
| | Digit 5-8 | Primary Paint |
| | Digit 9 | Open Space |
| | Digit 10-13 | Secondary Paint |
| | Digit 14 | Open Space |
| | Digit 15-18 | Trim Code |
| | Digit 19 | Open Space |
| | Digit 20-22 | Engine Sales Code |
| | Digit 23 | Open Space |
| Line #3 | Digit 1-12 | Vehicle Order Number |
| | Digit 13 | Open Space |
| | Digit 14-16 | Vinyl Roof Code (Door Combo Code - Pilette) |
| | Digit 17 | Open Space |
| | Digit 18-23 | Model |

J901N-20

If there is not enough space left in the row for all of the 6-digit SEC code (if used):

- the unused space will remain blank, and
- the code will be listed in the next row.

The last nine positions of row 7 will contain a 2-digit code, when applicable, and a 6-digit gateline serial number (same as the last 6 numbers of the VIN).

The last code imprinted on a vehicle code plate will be followed by the imprinted word END. When two vehicle code plates are required, the last available spaces on the first plate will be imprinted with the letters CTD (for continued).

When a second vehicle code plate is necessary, the first four spaces on each row will not be used because of the plate overlap.

ENGINE AND TRANSMISSION/TRANSFER CASE IDENTIFICATION

When required, refer to Group 9—Engines for all

engine identification data. Refer to Group 21—Transmissions for all transmission/transfer case identification data.

MAJOR COMPONENT IDENTIFICATION

When required, refer to the applicable service information group for major component identification data.

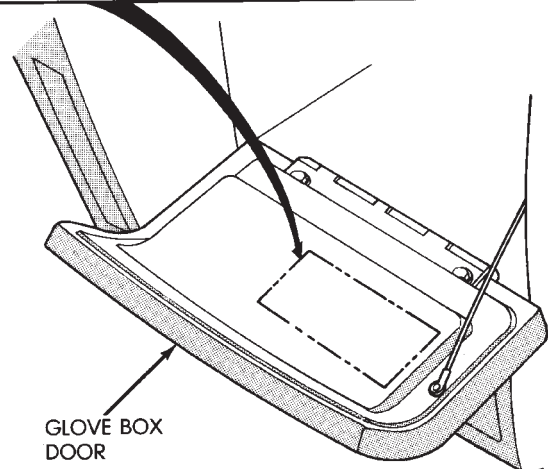
TIRE INFLATION PRESSURE LABEL

The tire inflation pressures label is located on the glove box door inside panel (Fig. 6). The tires should also be inspected for visible wear. Also, inspect the tires for cracks, bulges and other road hazard damage. Refer to Group 22—Tires And Wheels.

VEHICLE DIMENSION DATA

The vehicle dimension data charts list the exterior and interior dimensions for each type of Jeep® vehicle.

| | | | |
|--|---|--|---------------------------------------|
| JEEP CHEROKEE TIRE INFLATION PRESSURES p.s.i. Inflate tires cold before running DO NOT reduce pressure if tires are warm. SF 8952 000 713 | FULL LOAD - 1100 lbs. (2 over 1000 lbs. - 3 over 1000 lbs. - 400 lbs. Air only) See Owner's Manual for maximum tire load. | 4 80 cyl. | FULL LOAD |
| | | The 302 P193/75R15 P200/75R15 P215/75R15 | Front Rear 30 30 30 30 30 30 |
| Made in USA | 7125/80D16 (59 000) 80 p.s.i. | | |



GLOVE BOX DOOR

J891N-3

Fig. 6 Tire Inflation Pressures Label—Typical

VEHICLE LOAD DATA

The Vehicle Load Data chart lists the following information:

- the gross vehicle weight rating (GVWR),
- the gross axle weight ratings (GAWR),
- the cargo weight, and
- the passenger weight for each Jeep® type/body style.

INTERNATIONAL VEHICLE CONTROL AND DISPLAY SYMBOLS

Most of the graphic symbols illustrated in the following chart are used to identify various instrument controls and displays.

VEHICLE DIMENSION DATA

VEHICLE EXTERIOR DIMENSION DATA

| MODEL NAME | MODEL | BASE cm/in | TRACK FRONT REAR cm/in | LENGTH | OVERALL WIDTH cm/in | HEIGHT |
|----------------------|-------|---------------|------------------------------|--------|---------------------------|--------|
| Cherokee 2 DR-2WD | XJ | 257.6 | 144.8 144.8 | 420.0 | 179.1 | 161.0 |
| | | 101.4 | 58.0 58.0 | 165.3 | 70.5 | 63.4 |
| Cherokee 4 DR-2WD | XJ | 257.6 | 144.8 144.8 | 420.0 | 179.1 | 161.0 |
| | | 101.4 | 57.0 57.0 | 165.3 | 70.5 | 63.4 |
| Cherokee 2 DR-4WD | XJ | 257.6 | 147.3 147.3 | 420.0 | 179.1 | 161.0 |
| | | 101.4 | 58.0 58.0 | 165.3 | 70.5 | 63.4 |
| Cherokee 4 DR-4WD | XJ | 257.6 | 144.8 144.8 | 420.0 | 179.1 | 161.0 |
| | | 101.4 | 57.0 57.0 | 165.3 | 70.5 | 63.4 |
| Wrangler 2 DR-4WD | YJ | 237.2 | 147.3 147.3 | 387.6 | 167.7 | 176.5 |
| | | 93.4 | 58.0 58.0 | 152.6 | 66.0 | 69.5 |

VEHICLE INTERIOR DIMENSION DATA

| VEHICLE | MODEL | HEAD FRONT REAR cm/in | LEG FRONT REAR cm/in | SHOULDER FRONT REAR cm/in | HIP FRONT REAR cm/in |
|-----------------------|-------|-----------------------------|----------------------------|---------------------------------|----------------------------|
| Cherokee | XJ | 97.3 96.5 | 105.7 89.7 | 139.7 140.2 | 140.5 113.0 |
| | | 38.3 38.0 | 41.6 35.3 | 55.0 55.2 | 55.3 44.5 |
| Wrangler (Hardtop) | YJ | 102.1 102.9 | 100.1 88.9 | 134.8 143.0 | 134.8 91.4 |
| | | 40.2 40.5 | 39.4 35.0 | 53.1 56.3 | 53.1 36.0 |

J931N-16

XJ VEHICLE LOAD DATA

| VEHICLE | BODY ¹ STYLE | WHEEL/ TIRE | GVWR ² | PASSENGER WEIGHT (MAX) | CARGO WEIGHT (MAX) | GAWR ³ FRONT | GAWR ³ REAR |
|-----------|--------------------------------|--------------------|-------------------|---------------------------|-----------------------|----------------------------|---------------------------|
| XJ 2WD | 72 | 15x7 P215/75R | 4550 | 750 | 400 | 2500 | 2700 |
| XJ 2WD | 74 | 15x7 P215/75R | 4600 | 750 | 400 | 2500 | 2700 |
| XJ 4WD | 72 | 15x7 P215/75R | 4850 | 750 | 400 | 2500 | 2700 |
| XJ 4WD | 74 | 15x7 P215/75R | 4900 | 750 | 400 | 2500 | 2700 |
| XJ 2WD | 72 W/TRAILER TOW PACKAGE | 15x7 P215/75R | 4550 | 750 | 400 | 2500 | 2700 |
| XJ 2WD | 74 W/TRAILER TOW PACKAGE | 15x7 P215/75R | 4600 | 750 | 400 | 2500 | 2700 |
| XJ 4WD | 72 W/TRAILER TOW PACKAGE | 15x7 P215/75R | 4850 | 750 | 400 | 2500 | 2700 |
| XJ 4WD | 74 W/TRAILER TOW PACKAGE | 15x7 P215/75R | 4900 | 750 | 400 | 2500 | 2700 |
| XJ 4WD | COUNTRY ¹ | 15x7 P225/70R15 | 4900 | 750 | 400 | 2500 | 2700 |

All Weights Listed In Pounds.

¹ 72 = 2-Door Body

74 = 4-Door Body

² Gross Vehicle Weight Rating

³ Gross Axle Weight Rating

YJ-VEHICLE LOAD DATA

| VEHICLE | BODY¹ STYLE | WHEEL/ TIRE | GVWR² | PASSENGER WEIGHT (MAX) | CARGO WEIGHT (MAX) | GAWR² FRONT | GAWR² REAR |
|----------------|-----------------------------------|------------------------|-------------------------|-----------------------------------|-------------------------------|-----------------------------------|----------------------------------|
| YJ | S | P205/75R15 | 4300 | 300 | 200 | 2500 | 2500 |
| YJ | SAHARA (2TG) | P215/75R15 | 4300 | 300 | 200 | 2500 | 2500 |
| YJ | SPORT (2TC) | P215/75R15 | 4300 | 300 | 200 | 2500 | 2500 |
| YJ | SE | P215/75R15 | 4300 | 300 | 200 | 2500 | 2500 |









All Weights Listed In Pounds.

¹ Gross Vehicle Weight Rating

² Gross Axle Weight Rating

J941N-3

VEHICLE CONTROL AND DISPLAY SYMBOLS

| | | | | | |
|--|--|---|---|--|---|
|  |  |  HEADLIGHTS, PARKING LIGHTS, PANEL LIGHTS |  |  HAZARD WARNING |  WINDSHIELD WASHER |
|  |  WINDSHIELD WIPER AND WASHER |  WINDSHIELD DEMISTING AND DEFROSTING |  REAR WINDSHIELD WIPER/WASHER |  REAR WINDOW DEFOGGER |  REAR WINDOW WIPER |
|  |  FUEL |  ENGINE COOLANT TEMPERATURE |  BATTERY CHARGING CONDITION |  ENGINE OIL |  SEAT BELT |
|  BRAKE FAILURE |  PARKING BRAKE |  FRONT HOOD |  VENTILATING FAN |  HORN |  LIGHTER |

SPECIFICATIONS

SPECIFICATION NOTATIONS

All torque specifications listed in this service manual are in both metric system and SAE/English system.

WARNING: THE USE OF INCORRECT ATTACHING HARDWARE CAN RESULT IN COMPONENT DAMAGE AND/OR PERSONAL INJURY.

During all procedures, it is important to retain the original attaching hardware. If the hardware is not reusable, replace new hardware with equivalent specifications.

METRIC SYSTEM NOTATION

The following conversion chart will assist in converting SAE/English units to equivalent metric units.

TORQUE SPECIFICATIONS

TORQUE CHARTS

If applicable, torque chart(s) for screws, bolts and nuts is/are provided at the end of each service information group. Refer to the Standard Torque Specifications chart and the bolt grade/class identification illustrations (Figs. 7 and 8).

It is important to be aware that the torque values listed in the chart are based on clean and dry bolt threads. Reduce the applicable listed torque value by 10 percent when the bolt threads are lubricated with engine oil and by 20 percent if new, plated bolts are being tightened.

Various sizes of (Torx) head fasteners are used as attaching hardware for numerous components in Jeep® vehicles.

BOLT THREAD AND GRADE/CLASS IDENTIFICATION

THREAD IDENTIFICATION

SAE and metric bolt/nut threads are different. The difference is described in the Thread Notation chart.

GRADE/CLASS IDENTIFICATION

The SAE bolt strength grades range from grade 2 to grade 8. The higher the grade number, the greater the bolt strength. The grade identification is determined by the line marks on the top of each bolt head (Fig. 7). The actual bolt strength grade corresponds to the number of line marks plus 2. For example:

- a grade 2 bolt has no line marks on top of the bolt head;
- a grade 5 bolt has 3 line marks on top of the bolt head;
- a grade 7 bolt has 5 line marks on top of the bolt head; and
- a grade 8 bolt has 6 line marks on top of the bolt head.

The most commonly used metric bolt strength classes are 9.8 and 12.9. The metric strength class identification number is imprinted on the head of the bolt (Fig. 8). The higher the class number, the greater the bolt strength. Some metric-dimension nuts are also imprinted with a single-digit strength class identification number on the nut face.

CONVERSION FORMULAS AND EQUIVALENT VALUES

| Multiply | By | To Get | Multiply | By | To Get |
|------------------|-----------|-------------------------|----------|-----------|------------------|
| in-lbs | x 0.11298 | = Newton-Meters (N•m) | N•m | x 8.851 | = in-lbs |
| ft-lbs | x 1.3558 | = Newton-Meters (N•m) | N•m | x 0.7376 | = ft-lbs |
| Inches Hg (60°F) | x 3.377 | = Kilopascals (kPa) | kPa | x 0.2961 | = Inches Hg |
| psi | x 6.895 | = Kilopascals (kPa) | kPa | x 0.145 | = psi |
| Inches | x 25.4 | = Millimeters (mm) | mm | x 0.03937 | = Inches |
| Feet | x 0.3048 | = Meters (M) | M | x 3.281 | = Feet |
| Yards | x 0.9144 | = Meters (M) | M | x 1.0936 | = Yards |
| Miles | x 1.6093 | = Kilometers (Km) | Km | x 0.6214 | = Miles |
| mph | x 1.6093 | = Kilometers/Hr. (Km/h) | Km/h | x 0.6214 | = mph |
| Feet/Sec. | x 0.3048 | = Meters/Sec. (M/S) | M/S | x 3.281 | = Feet/Sec. |
| Kilometers/Hr. | x 0.27778 | = Meters/Sec. (M/S) | M/S | x 3.600 | = Kilometers/Hr. |
| mph | x 0.4470 | = Meters/Sec. (M/S) | M/S | x 2.237 | = mph |

| COMMON METRIC EQUIVALENTS | | | |
|---------------------------|---|----------------------|--|
| 1 Inch | = | 25 Millimeters | |
| 1 Foot | = | 0.3 Meter | |
| 1 Yard | = | 0.9 Meter | |
| 1 Mile | = | 1.6 Kilometers | |
| 1 Cubic Inch | = | 16 Cubic Centimeters | |
| 1 Cubic Foot | = | 0.03 Cubic Meter | |
| 1 Cubic Yard | = | 0.8 Cubic Meter | |

STANDARD TORQUE VALUES

| BOLT SIZE | BOLT TORQUE | | | |
|-----------|-------------|--------------------|---------|--------------------|
| | GRADE 5 | | GRADE 8 | |
| | N-m | ft-lbs (in-lbs) | N-m | ft-lbs (in-lbs) |
| 1/4-20 | 11 | (95) | 14 | (125) |
| 1/4-28 | 11 | (95) | 17 | (150) |
| 5/16-18 | 23 | (200) | 31 | (270) |
| 5/16-24 | 27 | 20 | 34 | 25 |
| 3/8-16 | 41 | 30 | 54 | 40 |
| 3/8-24 | 48 | 35 | 61 | 45 |
| 7/16-14 | 68 | 50 | 88 | 65 |
| 7/16-20 | 75 | 55 | 95 | 70 |
| 1/2-13 | 102 | 75 | 136 | 100 |
| 1/2-20 | 115 | 85 | 149 | 110 |
| 9/16-12 | 142 | 105 | 183 | 135 |
| 9/16-18 | 156 | 115 | 203 | 150 |
| 5/8-11 | 203 | 150 | 264 | 195 |
| 5/8-18 | 217 | 160 | 285 | 210 |
| 3/4-16 | 237 | 175 | 305 | 225 |

J89IN-9

THREAD NOTATION—SAE AND METRIC

| INCH | | METRIC | |
|---------------------------------|----------------------------|--------------------------------------|---|
| 5/16-18 | | M8 X 1.25 | |
| THREAD MAJOR DIAMETER IN INCHES | NUMBER OF THREADS PER INCH | THREAD MAJOR DIAMETER IN MILLIMETERS | DISTANCE BETWEEN THREADS IN MILLIMETERS |

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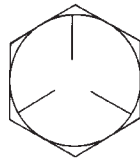
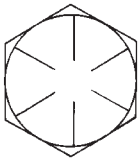



| SAE CLASSIFICATION | | |
|--|---|---|
| GRADE 5 | | GRADE 8 |
|  | MARKINGS FOUND ON TOP OF BOLT HEAD INDICATE GRADE |  |
| 120° | | 60° |
|  |  |  |
| GRADE 2 | GRADE 5 | GRADE 8 |
| (SAE) BOLTS—IDENTIFICATION MARKS CORRESPOND TO BOLT STRENGTH—INCREASING NUMBERS REPRESENT INCREASING STRENGTH. | | |
| J89IN-11 | | |

Fig. 7 SAE Bolt Grade Identification

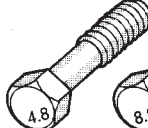
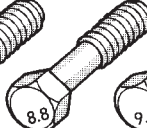
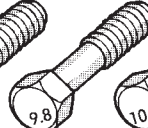
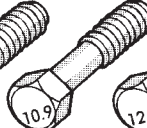
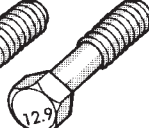
| | | | | |
|--|---|--|--|--|
|  |  |  |  |  |
| METRIC BOLTS—IDENTIFICATION CLASS NUMBERS CORRESPOND TO BOLT STRENGTH— INCREASING NUMBERS REPRESENT INCREASING STRENGTH. | | | | |
| J89IN-10 | | | | |

Fig. 8 Metric Bolt Class Identification

